

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

STEAMBOAT CREEK INSECT CONTROL PROJECT

COEUR D'ALENE NATIONAL FOREST

IDAHO

REPORT FOR THE SEASON OF 1929



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INTRODUCTION

This report is prepared as a means of submitting a full and final account of the 1929 insect control operation on Steamboat Creek. This project should, and probably will be continued as with the limited funds available approximately 82% of the infested trees were treated.

HISTORY OF PROJECT

During the latter part of October 1928 an examination was made of the East fork of the Steamboat Creek drainage to determine the present status of a reported out-break of the Mountain Pine Beetle in White Pine. The attached map will show that portion of the drainage covered and the location of the heavily-infested area. Within the area covered by the survey there is a rather light stocking of mature white pine, which averages 8530 feet, board measure, per acre. The white pine, of which there is a total volume of approximately 80 million feet, board measure, comprises but 39 percent of the total volume of merchantable timber within the area.

During this survey some 33 miles of sample strip, varying from two to three chains in width, or a total of 545 sample acres, were secured. Though these strips were mechanically selected and run on general compass bearings, their location was carefully considered in order that a representative sample of the area could be secured. Along these strips, the lineal distance of which was paced, the 1927 and 1928 attacked trees were counted and recorded for every ten chains. The strips were then plotted upon a map in order to show the areas of heaviest infestation.

The data secured from these strips show that there were some 214 trees attacked in 1928, as against 75 trees for 1927, which gives an increase of 185 percent. The data, when reduced to an acreage basis, shows that there is an average of 0.39-1928 attacked trees per sample strip acre. From the attached map it will be seen that a heavy concentration of beetles has occurred along the East fork of Steamboat Creek Trail. This trail was constructed during 1927 and many trees were injured through blasting, etc., which were subsequently attacked in 1928. On a strip 143 chains long and covering some 34.9 acres, which was run along this trail, the data shows that there was some 90 - 1928 attacked trees, which gives an average of 2.57 trees per acre. It is very evident from data secured from sample strips taken from such concentrations, due to the creation of abnormal conditions within a forest, would give an inflated figure if applied to such a small acreage as we are now considering. On the other hand, it cannot be entirely disregarded in considering the present status of the infestation. Therefore the available data have been corrected so that an average of 0.28 infested trees per sample strip acre is shown. This figure when applied to the total acreage of the area surveyed, which is approximately 9000 acres, gives a total of 2500—1928 infested trees.

Time was not available for the extension of this survey into adjacent areas. However, from general observations it would seem that conditions within the Can Creek drainage, a tributary of Steamboat Creek, are somewhat comparable to the general infestation within the East fork of Steamboat Creek, exclusive of the concentration which is present along the new trail. That reliable data on this point are not available is regretted, for in the recommendation of control measures for an area a knowledge of conditions within adjacent regions is very essential. Though it is realized that conditions may be equally as bad within adjacent areas, it does not detract from the fact that in the area surveyed the infestation is far above a normal status, and that a serious epidemic can be considered as pending.

The high grade white pine within the Steamboat Creek drainage comprises one of the most valuable timber stands of the Coeur d'Alene National Forest. Though these timber stands are merchantable, they will perhaps not be marketed for ten or fifteen years. However, the accessibility of this drainage, and the value of the timber stands in question would seem to more than justify protection from insect loss over such a period. Furthermore it is very evident that a marked increase in the infestation occurred during the past season, the future of which is impossible to predict. The out-break may die down in a year or more, or it may develop into an epidemic which would result in the destruction of large volumes of white pine. Regardless of the uncertainty of such situations, control measures are more than justified if one considers the possibilities of such out-breaks. It is therefore recommended that all infested trees within the East Fork of Steamboat Creek drainage be treated during the spring of 1929 and that \$6500 be allotted for the institution of this project. It is further recommended that during the 1929 season a rather general survey of the entire Steamboat Creek drainage and adjacent areas be made for the purpose of locating any existing out-breaks of this pest, and subsequently instituting control measures when and where necessary.

The above statement is a history of existing conditions on East Fork of Steamboat Creek when initial work on this project was commenced in April 1929.

The sum of \$6500 was allotted to this project and with this amount in view work was planned to spend the allotment prior to the time the beetles emerge from the trees which is approximately June 20.

1929 SPRING CONTROL OPERATION

A preliminary statement covering 1929 spring control operations on this project was submitted July 2, 1929, by the writer. At that time complete cost and production records were not available. Mere detailed records of costs and production are given herein.

The job was conducted by Chief Lumberman Thomas Crossley of the Coeur d'Alene National Forest as a forest project under Supervisor McHarg. Henry Rust of the Bureau of Entomology was on the job from beginning to end and rendered valuable assistance, particularly in regard to the spotting operation of the project. J. C. Evenden, Entomologist, Bureau of Entomology, visited the area on one occasion and inspected the work.

The area treated comprised a total of 5620 acres located in sections 10,

15, 16, 21, 22, 23, 26, 27, 28, 32, 33, and 34 of Township 51 N., R. 2 E., B. M. and consists mainly of lands in the East Fork of Steamboat Creek drainage, Coeur d'Alene National Forest, Idaho, and are shown on a map which forms a part of this report.

The equipment used on this project was obtained from Insect Control Stock at the Spokane Warehouse. Equipment was concentrated at the Coeur d'Alene Warehouse during April. The Coeur d'Alene truck was used to a small extent in transporting equipment from warehouse to deck of the Red Collar Line on Coeur d'Alene Lake.

A string of 8 head, 7 mules and 1 saddle horse, were used for packing purposes. Coeur d'Alene pack stock was used. The Coeur d'Alene forest contributed \$149.42 toward the expense of the packing.

On April 8 Forest Officers Crossley and Thompson made a snow-shoe trip into Steamboat drainage by way of the Stull Creek and East Fork of Steamboat Creek trails to ascertain the possibility of initiating work on the project. Snow conditions were such, on the area to be worked, that it was impossible to use a pack train to move a camp to the flat at the confluence of East and West Forks of Steamboat Creek, where camp site was planned to be set up. On April 27 Forest Officers Crossley and Maryott left Coeur d'Alene with twelve men to establish a temporary Headquarters Camp on flat at the mouth of Scott Creek. This Creek is but a short distance up river from Steamboat Creek and the road up Steamboat Creek starts at this point. ~~Ten~~ men met us at the camp site making a total of sixteen men on the job.

The supplies and equipment, of which there were eight tons, was unloaded from train at noon of the 27th and work then commenced carrying the same over to the river, a distance of approximately 600 feet. The time of the men from noon of the 27th to noon of 28th was spent in ferrying the supplies and equipment across river, by means of a small boat, and establishing camp, a distance of 300 feet up Scott Creek to camp site selected.

Mr. H. C. Tayler, of Coeur d'Alene, has a fully equipped logging camp situated on Steamboat Creek within one mile of the Forks, the logical camp site selected from which the spotting and treating work will be initiated.

He gladly gave the Forest Service permission to use his camp temporarily until we could get the camp set up at the Forks. With this end in view it was decided to send the cook, flunkey and ten men up to this camp and get spotting operation under way. The start was made from River camp at noon and subsistence supplies were back-packed up to the Tayler Camp, a distance of 5 miles. This work can be appreciated when it is taken into consideration that there are 23 fords on the road and mostly all had to be taken in water from knee-deep to hips. An old trail location was looked over and men put to work cleaning it out in order to eliminate some of the fords for men on foot.

Spotting work commenced on the morning of April 30 with two crews of 3 men each consisting of a chief spotter and 2 spotters. The forks camp site was within a few chains of Section Corner 3--4--33 and 34 so it was decided to start spotting work in Sections 33 and 34. Each crew took a

section and ran their strip lines north using above mentioned corner as their starting point. G. B. Valentine and D. S. Robertson were the Chief Spotters, both of whom are experienced woodsmen, Valentine having put in two seasons on spotting work in the Big Hole Basin. Forest Officer J. O. Thompson came to camp on April 30 and he was sent up to Taylor Camp to act as Camp Manager. Packer and string of mules came on the evening of May 1 and first load of supplies was packed up the creek on May 2, part of which was left at Taylor Camp and the balance taken up to the Forks Camp site.

Camp was established at the forks on May 4, and on May 6 there were 4 spotting crews of 3 men each operating. Ranger J. O. Thompson and Harry E. Crossley being the other chief spotters both of whom have had experience in Insect Control work. On this date there are 24 men in camp. Treating work started on this date. There were 30 men in camp on May 8 and on May 11 the full sized crew of 35 men were on the job. On May 13 a spotters camp was established at the confluence of Cabin Creek and East Fork of Steamboat Creek, a distance of 2 miles up East Fork from Forks Camp. Ranger Thompson acted as Camp Manager and had a crew of cook and 4 spotting crews, one of which he was the Chief Spotter. Between this date and May 25 there were 5 treating crews operating from Forks Camp and 4 spotting crews operating from Cabin Creek Camp.

By the latter date it was thought best to use the spotting crews for treating purposes as according to the allotment estimates for the project there would only be money available up to night of June 7. More money was made available to carry on the project until June 20 when it was thought best by Entomologist Evenden to close down as the beetles were emerging in such numbers that it was useless to attempt any further work. Both camps were maintained and operated until the evening of June 17 when it was decided to close down the project. Two days were lost in May and two days in June on account of rain. The crews did not work on Sundays. The men used on this project were practically all obtained locally and consisted of men who worked on the Forest during the open season as Look-outs, Smoke chasers, Trail Foremen, Laborers, etc. There was no labor turn-over to mention. The only men who left the job were those who had to report by June 10 for positions on the Ranger Districts where their services were needed by that date. The other men finished out the job and the Rangers held their positions open for them. No labor troubles were experienced and fortunately there were no fatalities, serious injury, or damage to private property during the course of the operation.

The central office of the Project was located at the Supervisor's Headquarters at Coeur d'Alene, Idaho. The Forest staff of clerks absorbed most of the additional clerical work. Ranger Maryott acted in the field as Camp Clerk and Paymaster. He handled the commissary ordering, etc. The supplies were ordered through the Supervisor's office at Coeur d'Alene.

Four hundred horse and mule days were spent on the job, as follows: 360 days for pack mules and 40 days for the packers saddle horse. Cost of the saddle and pack mules involved only their feed. The stock had been brought up from winter range and accordingly needed lots of oats and hay. The total cost of the pack string was \$549.82, or a rate of \$1.37 per horse or mule per day. The cost of boarding men at camp based on 4700 meals served was \$2326.97. Of this amount \$430.96 was for wages of cooks and flunkies, \$1646.01 for subsistence supplies and \$250.00 for transportation. The rate per meal was 49 $\frac{1}{2}$ cents divided as 9 cents for cooks and flunkies, 35 cents for subsistence supplies and 5 $\frac{1}{2}$ cents for transportation.

ORGANIZATION

Coeur d'Alene, Idaho, the Supervisor's Headquarters, was selected as the central point from which the project could be administered as the Forest office and Warehouse are located at this point. This operation was a Forest project under the direction of Supervisor McHarg. The central overhead force consisted of Thomas Crossley in charge, with Dana W. Maryott as assistant camp clerk and Paymaster and John O. Thompson as Camp Manager of spotting crew camp and Chief Spotter.

SPOTTING

Spotting was done on all the area covered in this project. The spotting was done by a 100 percent strip survey. Crews were organized consisting of one Chief Spotter and two spotters. The Chief Spotter ran parallel compass lines from his control which were about three chains apart. One Spotter on either side of him worked a strip of about $1\frac{1}{2}$ chains in width in search of infested trees. The chief spotter made a rough drainage map and was responsible for the work of his crew. Each crew was given a serial symbol as A, B, C, etc., and each man carried a small hand axe, tacks, linen tags 4"x6" and crayon. All infested trees found were blazed and a linen tag tacked thereon bearing the crew symbol and consecutive number of the tree for this crew; that is, Crew A marking its 25th tree would show A 25, thus affording a means of checking up the work done by a given crew. The Chief Spotter's maps indicate the approximate location of the tagged trees by numbers or groups of infested trees by inclusive numbers contained in the groups, and the treating crew foreman can later take the maps and find the trees with little or no difficulty.

Three temporary men were employed as Chief Spotters and one Forest officer, making a total of 4 crews used during the operation. 1314 trees were spotted on an area consisting of 5620 acres which indicates one infested tree to be located on each 4.2 acres. 322 man days was used in spotting making an average of 4.14 trees per day to the man. The cost of labor, for spotting was \$940.25 or a rate of 71 cents per tree. Costs of this work were high owing to scattered attacks, steep, rough, and brushy terrain.

TREATING

Owing to the infested trees being so widely scattered and the country so brushy it was necessary to have one man acting as Scout for the entire treating crew. He would locate the trees by use of the maps and compass and blaze lines to them where necessary. The crews consisted of from 3 to 5 men, one of which acted as foreman.

The larger sized crews were used only where the infestation was more prevalent and where the sawyers could keep on felling trees instead of assisting in the peeling work as is done in the 3 man crew. The equipment for a three man crew consisted of a $5\frac{1}{2}$ foot cross-cut saw and handles, 2 D B axes, 1 wedge and hammer, 1 light cant-hook and 3 peeling spuds.

The trees were all felled and cut up into 16 foot 4 inch logs as far as the infestation showed on the tree. The bark was removed from the logs and also from the stumps of the trees, axes and peeling spuds being used for this purpose. The trees treated were mostly all white pine there being but a very small percentage of Ledge Pole Pine trees. White pine trees were often infested to a four inch top. Trees were treated for distance of from 16 feet to 120 feet in length, the average length tree treated being 57.51 feet. The Diameter Breast High varied from 8 inches to 28 inches, the average being 16.64 inches.

The following tabulations covering different phases of the work are self-explanatory:

SPOTTING

Number of trees spotted	Total Number of man days	Average number trees per man day	Total cost for labor	Cost per tree for labor
1314	322	4.14	\$940.25	\$.708

"A"

TREATING

Number of Trees	D B H Inches	Length Tree Treated Feet	Top Diameter Inches	Volume in Board Feet	Surface Peeled in Square feet
1074	17939	61868	9448	423270	211663
Average Tree	16.64	57.51	8.79	394	197

"B"

TREATING

Number of Trees	Volume Board feet	Bark Surface peeled Square feet	Man days	Out put per man day		
				Trees	Volume	Bark Surface peeled
1074	423270	211663	642	1.67	659	330

SUBSISTENCE

Number of meals served	Salary Cooks Flunkies	Subsestence Supplies	Transportation	Total Cost	Rate per meal
4700	\$430.96	\$1646.10	\$250.00	\$2326.97	\$.495

"D"

SUMMARY OF COSTS

ITEM	COST	RATE PER TREE
Spotting	\$ 940.25	\$.708
Treating	2181.07	2.030
Overhead	419.05	.390
Camps	878.78	.818
Equipment and Supplies	181.98	.170
Transportation	903.93	.841
Subsistence	1646.01	1.532
Miscellaneous	30.23	.028
TOTAL	\$7244.40	\$6.517

The spotting cost per tree is based on 1314 trees and the other items on 1074 trees.

"E"

The costs enumerated above, to the casual observer, will appear comparatively high but the following explanations of each item of costs will give a more clearer vision of the difficulties encountered in order to accomplish the different activities of this project.

SPOTTING

Rate nearly 71 cents. An area consisting of 5620 acres was covered in order to spot and tag 1314 trees. This indicates that an area of 4.28 acres had to be 100% examined and mapped in order to spot and tag one tree. The

area covered in this project is typical of the white pine type on the Coeur d'Alene forest in having steep slopes and considerable underbrush.

TREATING

Rate \$2.03 per tree. As shown previous in this report the average tree treated consisted of a log 57.51 feet in length, 16.64 inches D B H and an inside top diameter of 8.79 inches. This log was cut into 4 sections as all logs were cut 16 feet, 4 inches long on the assumption that possibly, in the near future, a sale might be made of them. Each average tree length treated contained a volume of 394 feet, board measure, and it required 197 square feet to peel the surface of bark. As in the spotting operation the trees treated were on the ratio of one tree to 4.28 acres. This required considerable time lost in going from one tree to another. The trees were mainly in groups of not more than 3 trees. Considerable of them were found alone. As indicated in previous tabulation the out-put per man day was 1.67 trees having a volume of 642 feet, board measure, and containing a peeled bark surface of 330 square feet.

The cost of treating will vary with the amount of infestation found on an area. The less time lost in travel will increase the out-put per man day.

OVERHEAD

Rate \$.39 per tree. This provided for the salary of Rangers Maryott and Thompson. Crossley's salary and expenses were contributed by the Coeur d'Alene Forest and paid from G. E. Funds.

CAMPS

Rate of \$.818 per tree. To camps was charged the following activities:

Cooks and flunkies	\$433.94
Handy man at River Camp	\$180.80
Saw Filer	\$ 50.00
Cutting wood	\$ 85.00
Clearing 2 camp sites, establishing and taking down 3 camps	\$129.04
TOTAL	\$878.78

The Handy man at the River Camp had various duties to perform. The River Camp was used as the base of supplies for the two camps up Steamboat Creek. His duties consisted of cooking for the packers, and other men coming and going from the upper camps, meet the train and see mail, supplies, etc., were brought over to camp which was 1/4 mile from the railroad track and across the main Coeur d'Alene River.

Sawfiling should possibly have been charged to treating.

Wood cutting was quite an item. There were 2 cook stoves and 14 Kimmell Fire Boxes used on the job and it required considerable wood to keep them going, as the climatic conditions during the time of this project were such that considerable wood was needed to keep the tents in a comfortable condition for the men.

EQUIPMENT AND SUPPLIES

Rate per tree for this item is 17 cents. This charge covers such E. and S. that was needed besides the equipment obtained from the Spokane warehouse (Big Hole Basin Project S & E).

TRANSPORTATION

Rate per tree is \$.841. This item includes the salaries of the packers, salaries of the crew in transporting on their backs of 8 tons of S and E from railroad track to base camp site. This was a distance of 1/4 mile and all had to be taken across River (in high water stage) by use of a small boat. Salaries of crew back packing supplies up to H. C. Taylor Camp on Steamboat Creek, a distance of five miles.

There is practically no trail on hillsides and the road crosses Steamboat Creek 23 times before the Taylor Camp is reached. Salaries of men cutting out 7 miles of trail between the base camp and forks of Steamboat Creek where Camp 1 was established. Maintenance charges on 7 mules and 1 saddle horse and their equipment. Feed for 8 head for a total of about 50 days. This consisted of plenty of oats and hay as the stock was brought from the winter range and put at once on the project. All Freight charges consisting of railroad and auto freight. The rate per tree appears high but take all these charges into consideration and it is readily explained.

SUBSISTENCE

Rate per tree is \$1.53. This item covers the costs of the supplies used for feeding the crew. The total cost per tree for the project amounted to \$6.52.

Spring control work on the Coeur d'Alene forest is a costly proposition. It is generally the middle of May or June 1 before the higher portions of the forest are open as to trails, roads, etc. This year the beetles began to emerge shortly after June 10 thereby causing the work to be discontinued by June 20.

Fall control work would seem to me to be better than Spring control. There would be more difficulty in spotting the trees but experienced men would have no trouble in accomplishing it. Snow conditions would not materially affect the treating. In fact, with the advent of the snow it might be possible to burn the logs instead of peeling them. The season for control work is so short in the Spring that the costs are bound to be high on account of climatic conditions encountered in the work.

*Respectively submitted
Thomas Crossley*
Chief Lumberman